Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently amended) A method for inspecting a specimen, comprising:

directing ultraviolet light to the specimen;

collecting light scattered from the specimen with a collection channel;

detecting light ~~scattered from the specimen~~collected by the collection channel with multiple detection channels, wherein the detected light has a selected wavelength range; and

detecting features, defects, or light scattering properties of the specimen using signals representative of the detected light.

2. (Original) The method of claim 1, wherein the ultraviolet light comprises nearly monochromatic ultraviolet light.

3. (Original) The method of claim 1, wherein the wavelength range is selected such that light fluoresced from the specimen is not detected.

4. (Original) The method of claim 1, wherein the wavelength range comprises wavelengths within about 1 nm to about 10 nm of a wavelength of the ultraviolet light.

5. (Original) The method of claim 1, wherein the wavelength range is selected such that the detected light comprises light fluoresced from the specimen.

6. (Original) The method of claim 1, wherein the wavelength range comprises wavelengths shorter than a wavelength of the ultraviolet light.

7. (Currently amended) The method of claim 1, ~~wherein detecting the light comprises detecting~~ the light ~~scattered from the specimen with two channels, and~~ wherein the light detected by the ~~two~~ multiple detection channels has different selected wavelength ranges.

8. (Currently amended) The method of claim 7, ~~wherein the two channels are arranged at~~ different collection ~~angles,~~ wherein one of the different selected wavelength ranges is selected such that the detected light has a wavelength that is approximately the same as a wavelength of the ultraviolet light, and wherein another of the different selected wavelength ranges is selected such that the detected light comprises light fluoresced from the specimen.

9. (Currently amended) The method of claim ~~8~~1, further comprising collecting light scattered from the specimen with an additional collection channel, wherein the ~~two~~ collection and additional collection channels ~~comprise two or more detectors arranged at a first of the different collection angles and two or more detectors~~ are arranged at ~~a second of the~~ different collection angles.

10. (Currently amended) The method of claim 1, further comprising collecting light scattered from the specimen with an additional collection channel and detecting light collected by the additional collection channel with at least one detection channel, ~~wherein detecting the light comprises detecting the light scattered from the specimen with two channels,~~ wherein the ~~two~~ collection and additional collection channels are arranged at different collection angles, and wherein the light detected by the ~~two~~ multiple detection channels has the same selected wavelength range as the light detected by the at least one detection channel.

11. (Currently amended) The method of claim 10, wherein the wavelength range ~~of the two channels~~ is selected such that light fluoresced from the specimen is not detected.

12. (Currently amended) The method of claim 10, wherein the wavelength range ~~of the two~~ channels is selected such that the detected light comprises light fluoresced from the specimen.

13. (Original) The method of claim 1, further comprising classifying the features or defects using signals representative of the detected light.

14. (Currently amended) A method for inspecting a specimen, comprising:

directing ultraviolet light to the specimen;

detecting light scattered from the specimen with one or more channels, wherein ~~each~~ at least one of the one or more channels comprises ~~one~~ two or more detectors, and wherein each of the ~~one~~ two or more detectors has an independently selected wavelength range; and

detecting features, defects, or light scattering properties of the specimen using signals representative of the detected light.

15. (Original) The method of claim 14, further comprising classifying the features or defects using signals representative of the detected light.

16. (Currently amended) A method for inspecting a specimen, comprising:

directing light having one or more incident wavelengths to the specimen;

collecting light scattered from the specimen with a collection channel;

separately detecting a first portion and a second portion of light ~~scattered from the specimen~~collected by the collection channel substantially simultaneously with multiple detection channels, wherein the first portion has a wavelength range selected such that the first portion does not include light fluoresced from the specimen, and wherein the second portion has a wavelength range selected such that the second portion comprises light fluoresced from the specimen; and

detecting features, defects, or light scattering properties of the specimen using signals representative of the first and second portions of the light.

17. (Original) The method of claim 16, wherein the one or more incident wavelengths are selected to stimulate fluorescence emission from one or more materials on the specimen.

18. (Original) The method of claim 16, wherein the one or more incident wavelengths are ultraviolet wavelengths.

19. (Original) The method of claim 16, wherein the wavelength range of the first portion comprises wavelengths within about 1 nm to about 10 nm of the one or more incident wavelengths.

20. (Currently amended) The method of claim 16, further comprising separately detecting a third portion of the light ~~scattered from the specimen~~collected by the collection channel with the multiple detection channels, wherein a wavelength range of the third portion is selected to include wavelengths shorter than the one or more incident wavelengths.

21. (Currently amended) The method of claim 16, further comprising separately detecting a third portion of the light ~~scattered from the specimen~~collected by the collection channel with the multiple detection channels, wherein a wavelength range of the third portion is selected such that the third portion comprises light fluoresced from the specimen at ~~wavelengths~~ a wavelength range different than ~~those~~ that of the second portion.

22. (Original) The method of claim 16, further comprising classifying the features or defects using an intensity of the first portion, an intensity of the second portion, or a combination thereof.

23. (Original) The method of claim 16, wherein said directing and said separately detecting are performed in a non-confocal mode.

24. (Original) The method of claim 16, wherein said directing and said separately detecting are performed in a darkfield mode.

25. (Currently amended) An inspection system, comprising:

an illumination subsystem configured to direct ultraviolet light to a specimen;

a collection channel configured to collect light scattered from the specimen;

multiple detection channels ~~a channel~~, configured to detect light ~~scattered from the specimen~~collected by the collection channel having a selected wavelength range; and

a processor configured to detect features, defects, or light scattering properties on the specimen using signals that are representative of the detected light.

26. (Currently amended) The system of claim 25, further comprising a second collection channel, wherein the collection channel and the second collection channel are arranged at different collection angles.

27. (Currently amended) The system of claim ~~25~~26, further comprising ~~a~~ second ~~channel~~multiple detection channels configured to detect light collected by the second collection channel, ~~wherein the channel and the second channel are arranged at the same collection~~ angle.

28. (Currently amended) The system of claim 25, ~~further comprising a second channel, wherein the channel and the second channel~~wherein the multiple detection channels comprise different types of detectors.

29. (Currently amended) The system of claim 25, ~~further comprising a second channel, wherein the channel and the second channel~~ wherein the multiple detection channels comprise the same type of detectors.

30. (Currently amended) The system of claim 25, ~~further comprising a second channel,~~ wherein ~~the channel~~one of the multiple detection channels comprises a bandpass filter, and wherein ~~the second channel~~another of the multiple detection channels comprises an edge filter, a notch filter, or a combination thereof.

31. (Currently amended) The system of claim 25, wherein the ~~channel~~ multiple detection channels comprises comprise one or more spectral filters, and wherein the one or more spectral filters are selected based on one or more materials of the specimen.

32. (Original) The system of claim 25, wherein the wavelength range is selected such that light fluoresced from the specimen is not detected.

33. (Original) The system of claim 25, wherein the wavelength range is selected such that light fluoresced from the specimen is detected.

34. (Original) The system of claim 25, wherein the wavelength range comprises wavelengths that are shorter than a wavelength of the ultraviolet light.

35. (Currently amended) The system of claim 25, ~~further comprising a second channel~~wherein the multiple detection channels are configured to detect the light ~~scattered from the specimen~~ having ~~a second~~different selected wavelength ~~range~~ranges.

36. (Currently amended) The system of claim 25, wherein the illumination subsystem and the ~~channel~~ multiple detection channels form a non-confocal optical subsystem.

37. (Currently amended) The system of claim 25, wherein the illumination subsystem and the ~~channel~~ multiple detection channels form a darkfield optical subsystem.